

Muhammad Raees Azam

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PROFILE

Google Global Solution Challenge 2024 Top 100 Finalist and Google Developer Student Clubs Lead 2023-2024 with extensive experience in AI, machine learning, and robotics. Recognized as one of the most practical students of my batch FALL 2020 during BS Computer Engineering at COMSATS University Islamabad, Abbottabad Campus, and received the prestigious WWB Scholarship for four consecutive years. Spearheaded a fully funded Final Year Project by Pakistan Engineering Council, focusing on AI-based crop monitoring, which won 2nd Prize at the Annual PEC Capstone Expo KP 2024. Also secured 2nd place in TechFestFall21 and earned double gold medals as the Best Graduate at Edwardes College Peshawar. Proficient in Java, MATLAB, C/C++, C#, Python, web development, and hardware design. Passionate about empowering peers through workshops and community service, contributing to the academic and extracurricular landscape.

EDUCATION

2020-2024

BS Computer Engineering, COMSATS University Islamabad, Abbottabad Campus, KPK, Pakistan

- **CGPA:** 3.28
- **Core Courses :** Electronics, Digital System Design, Embedded Systems, Artificial Intelligence, Control Systems, Machine Learning, Neural Networks, Digital Image Processing, Website Development

2017-2019

FSC Computer Science, Edwardes College Peshawar, KPK, Pakistan

- **Marks:** 886/1100 | **Percentage:** 80.5% | **Core Courses :** Computer Science, Physics and Mathematics
- Awarded with **Double Gold Medal** In Computer Science Department and **Student Talent Award 2018**

2015-2017

SSC Computer Science, Working Folks Grammar School Peshawar 1 (Boys), KPK, Pakistan

- **Marks:** 929/1100 | **Percentage:** 84.45% | **Core Courses :** Computer Science, Physics, Chemistry and Mathematics
 - School Topper and **Student Talent Award 2017**
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Professional Experience

Data Engineer, National Center of Artificial Intelligence, CISNR Lab UET Peshawar.

2023-Till Now

- Developing AI Algorithms and Models for various applications.
- Designing and Optimizing Machine Learning and Deep Learning Models.
- Analyzing Large Datasets to enhance AI model training and testing.
- Collaborating with Cross-Functional Teams to define AI system specs and requirements.
- Deploying AI Models into production and monitoring their performance.

Google Developer Student Clubs Lead, Google Inc.

2023-2024

- Recognized as the best Lead of South Asian and Frontier Region by Google Developers Student Clubs Global Team and Invited as a Guest Speaker in the GDSC Graduation Ceremony 2024
- The only LEAD who conducted the Gemini, Build with AI Hackathon in Pakistan
- Submitted the most Solution Challenge Project in Global Google Solution Challenge 2024 in Pakistan
- Conducted 65+ events, Facilitated 2500+ Attendees and Trained 350+ students in 5 different skillset including AI/ML, Web Development, Game Development, Graphic Designing and Flutter Development
- Worked with Police Department for smart Investigation System and Digitalizing the Databases of criminal records
- Previously served as Robotics and Planning Lead for two years, organizing technical sessions and robotics competitions.
- Trainer in Google CloudSeekho season 05 Trainer in COMSATS Abbottabad.

General Secretary, IET OnCampus, COMSATS University Islamabad, Abbottabad Network 2020-2023

- Managed society operations, events, and communications.
- During this time we won IET International “ Financial Savvy Award” and “ Impactful Event Award”
- Conducted and Organized 8 impactful events with 500+ Attendees
- Trainer in two impactful workshops, “PCB Fabrication Workshop” and “RoboMaker Workshop”
- Previously Served as Graphic Designer and Proctor, contributing to visual content and maintaining discipline.

Media Head, IEEE COMSATS Abbottabad Chapter 2020-2022

- Managed society internal and external Graphics using Adobe Illustrator, Photoshop, Canva and Figma.
- Conducted and Organized 8 impactful events with 500+ Attendees
- Trainer in two impactful workshops, “Python for Everyone” and “Arduino101”

Co-Founder and Chief Technology Officer (CTO), Orbailix 2021-2022

- Oversaw technology development and implementation for the organization.
- Working and Completion the Company’s initiatives
- Closely worked under scrum method

STEM and Robotics Intern, National Center of Robotics and Automation Peshawar July 2022

- Worked on precision agriculture projects, gaining hands-on experience in robotics applications.
- Worked on Mbot Ranger and its Movement study.
- Build Lithium Battery Management System (BMS) using BMS Module Board
- Worked on PCB Designing and Simulation using Proteus
- Working on STEM KIT Robots
- Teacher for Teenager STEM enthusiastic

Robotics Teacher’s Assistant, Pakistan Innovation Foundation July 2019

- Assisted in teaching and supervising robotics and electronics projects at the National STEM School.
- Closely managed the whole Makers summer Camp at College of Electrical & Mechanical Engineering, NUST.

Projects

1. Global Radiation Prediction using Neural Network Time Series

- Developed a predictive model using neural network time series analysis for global radiation prediction.
- Implemented machine learning techniques to improve the accuracy of radiation forecasts.
- MATLAB NN-Tool is used to make this model with 96% testing and 98% Training accuracies.

2. Malicious Application Classification Using Machine Learning

- Created a system to classify applications as malicious or benign using various machine learning algorithms.
- Focused on improving cybersecurity measures by identifying harmful applications.
- Implementation on various Techniques using Deep Learning and Traditional Machine learning Methods and Comparison matrices also using SVM, Random Forest, ANN and DNN Techniques.

3. Diseased Plants and Lungs Semantic Segmentation Using FCN

- Implemented FCN 8s for semantic segmentation of diseased plant leaves and lung images.
- Binary Class segmentation using 3 Channel for Disease Plants and 1 Channel for Lungs Segmentation.
- Recognized as the best semester project for its innovative use of deep learning techniques in medical and agricultural domains.

4. Segmentation in Agricultural Images using Traditional Machine Learning

- Developed segmentation algorithms for identifying different regions in agricultural images.
- Applied traditional machine learning methods to enhance the precision of segmentation.
- Using Extracting multiple features using Gabor Filters and making Filter Bank of it.
- Using SVM and KNN for Segmentation and Pixel wise classification of Filter Bank.

5. Designed a Horoscope on Python COLAB

- Created an AI-based horoscope prediction model using Python and Google Colab.
- Implemented natural language processing and machine learning techniques for accurate predictions.

6. Targeted Spraying Drone Project using Raspberry Pi

- Developed an AI-driven drone system for targeted spraying in agriculture.
- Used machine learning algorithms to identify and target specific areas for spraying, improving efficiency and reducing chemical usage.
- Technology used in this is Tensorflow Lite, Debian Bookworm Operating System, L298N Motor driver with Sucking DC Motor

7. The RLC Modified Trainer

- Designed and developed an advanced RLC trainer for educational purposes.
- Achieved 2nd position at TechFestFall21 Project competition.
- A Compactfull and Cost efficient Design as compared to traditional RLC Trainer.
- PCB Designing and Fabrication is implemented.
- PCB Design is made and simulated in Proteus.

8. Robotic Arm using Arduino

- Developed a robotic arm controlled via Arduino microcontroller.
- Implemented precise movement algorithms for various tasks.
- Servomotors with Cardboard design Arms are made
- Arduino IDE and C Coding is implemented on it, Simulation is done in Proteus.

9. Home Automation using IoT(Internet of Things)

- Developed a home automation system using Internet of Things (IoT) technologies.
- Implemented control and monitoring of home appliances via a mobile app.
- Nodemcu 8266 with Relay Modules is used with Blynk Software and Arduino IDE

SKILLS

KEY SKILLS

- Python, TensorFlow, Keras
- Java, MATLAB, C/C++, C#
- HTML, CSS, JavaScript
- Verilog HDL, Assembly Language
- PCB Designing, Proteus, Circuit Maker
- Machine Learning, Deep Learning, Neural Network
- Digital Image Processing, Embedded Systems
- Control Systems, Artificial Intelligence

TOOLS/APIs

- TensorFlow, Keras
- Proteus, Circuit Maker, MATLAB
- Visual Studio, Android Studio
- VS Code, Jupiter Notebook, Google COLAB
- Git, Replit, GitHub
- Google Cloud Plateform
- Mission Planner

SOFT SKILLS

- Leadership
- Teamwork and adaptability
- Problem solving and Decision Making
- Time Management and Organization
- Open and adaptive
- Community Engagement and Socialization

PROGRAMMING LANGUAGES

- Python, MATLAB
- C/C++, C#
- Java, HTML, CSS, JavaScript
- Verilog HDL, Assembly Language

DATABASES

- Microsoft SQL Server
- MySQL
- Microsoft Access, Firebase

HARDWARE

- Arduino Nano, UNO
- MSP430
- Raspberrypi
- PIC Microcontroller
- NAO Robot, Mbot Ranger and LEGO EV3
- APM Flight Controller

SYNOPSIS OF ACHIEVEMENTS

Academic Achievements

- WWB Scholarship Award recipient for four consecutive years (2020-2024)
- Best Graduate and Double Gold Medalist at Edwardes College Peshawar (2019)
- 1st Position in Secondary School Certificate and Inter School Painting Competition at Working Folks Grammar School Peshawar (2015).

Projects and Competitions Highlights

- 2nd Prize at Annual Pakistan Engineering Council Capstone Expo KP 2024 for AgriTech (50,000 PKR)
- Google Global Solution Challenge 2024 Top 100 Finalist with AgriTech.
- Best Project Submission in Pakistan for Google Global Solution Challenge 2024.
- Fully funded Final Year Project (FYP) by Pakistan Engineering Council (0.2 Million PKR).
- 2nd Place at TechFestFall21 Project Exhibition, COMSATS University Islamabad 2021
- 3rd Prize in Multiomics Creative Logo Designing Competition 2020.
- 1st Prize in Multiomics Creative Poster Designing Competition 2020.
- Winner of NASA Space App Challenge 2019 at CECOS University 2019
- Top 15 Startup Winner at Pakistan Startup Cup 2018.
- 3rd Prize at Startup Weekend Peshawar 2017 with the idea “Meat Inspector” (25,000 PKR).
- Multiple Shields of Appreciation at Student Talent Expo (2016-2018).

Leaderships and Community Engagements

- Google Developer Group Peshawar Outreaching Head.(2024)
- Google Developer Student Club Lead (2023-2024).
- Best Collaborator and Community Partner Award at AI Odyssey DevFest’23, Google Developers Group Cloud Islamabad.(2023)
- Shield of Outstanding Performance at Google Developer Students Club (2023).
- Resource Person for “Arduino 101” Workshop at Govt College of Technology Abbottabad (2023).
- Resource Person for “RoboMaker’s Workshop” at COMSATS University by IET OnCampus Robotics Club (2023)
- Appreciation for Providing Graphics support for Department of Electrical & Computer Engineering COMSATS University Islamabad, Abbottabad Campus. (2023)
- IET OnCampus COMSATS University Abbottabad General Secretary (2022)
- Resource Person for “PCB Fabrication Workshop” at COMSATS University by IET Oncampus (2022)
- Resource Person for “Python For Everyone Workshop” at COMSATS University by IEEE COMSATS Chapter(2021)
- Selected as Teacher’s Assistant in PIF’s National STEM School at NUST CEME (2019).

LANGUAGES

- English, Urdu, Punjabi, Pushto, Chitrali
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